ABSTRACT

A method for enhancing the accuracy of PRK wherein a UV power meter is placed in the optical path of the laser beam. In one preferred embodiment, the power meter is placed distal to the last optical element so that any optical degradation that affects laser performance is taken into account. The meter consists of a UV-B cube and a pulnix camera with a software package. The meter is used to monitor the fluence of each laser pulse. The power meter is used to size each pulse and to quantify the energy in each pulse. Sensing means is employed to measure intraoperative pulse-to-pulse energy during photorefractive keratectomy (PRK), using said data in conjunction with the location of the pulse within the ablation zone to determine the cumulative energy thus being achieved, and adjusting said laser to treat more or less at each point based upon the difference between the ideal cumulative energy map and the observed cumulative energy map derived from intraoperative power determination.